



CLIENT Genesis Solar, LLC

PROJECT Ford Dry Lake Solar Energy Project

SUBJECT Stormwater Flood Routing Calculation

JOB NUMBER 52011206 WBS NUMBER 024

CALCULATION NO.: GENI-0-DC-024-C-001 PAGE 1 OF 6

<p><b>DESCRIPTION/PURPOSE</b></p> <p>Perform a dynamic flood routing model to simulate unconfined overland flow and channel flow in order to do a conceptual design of stormwater channels capable of diverting the 100-year storm around the proposed Ford Dry Lake Solar Energy Project Site. Channels shall be designed to withstand erosion and discharge flows to downstream undisturbed areas while maintaining velocities and flow depths to equal or less than pre-development conditions.</p>						
<p><b>METHOD OF ANALYSIS</b></p> <p>FLO-2D Software.</p>						
<p><b>CODES AND STANDARDS</b></p> <p>None applicable.</p>						
<p><b>INFORMATION SOURCES</b></p> <ol style="list-style-type: none"> <li>1. Worleyparsons, Drainage, Erosion and Sediment Control Plan, August 19, 2009.</li> <li>2. Site Topography, "Genesis_tpo_totalwatershed_30metercontours.dtm"</li> <li>3. California Soil Resource Lab, STATSGO CA, Mapunit Browser.</li> <li>4. FLO-2D Reference Manual 2009.</li> <li>5. USDA, TR-55 Manual, June 1986.</li> <li>6. Riverside County Flood Control and Water Conservation District, HYDROLOGY MANUAL, April 1978.</li> </ol>						
<p><b>Software Used</b></p> <table border="1"> <thead> <tr> <th>Title</th> <th>Version</th> <th>Validated (Yes/No/NA)</th> </tr> </thead> <tbody> <tr> <td>FLO-2D</td> <td>2009.06</td> <td>NA</td> </tr> </tbody> </table>	Title	Version	Validated (Yes/No/NA)	FLO-2D	2009.06	NA
Title	Version	Validated (Yes/No/NA)				
FLO-2D	2009.06	NA				
<p><b>ASSUMPTIONS</b></p> <p>Contained in the body of the calculation.</p>						
<p><b>CONCLUSIONS OR RESULTS</b></p> <p>Within Calculation. See Page 6.</p>						

REV	DATE	DESCRIPTION	PAGES REVISED	PAGES ADDED	PAGES DELETED	BY/DATE	REV/DATE	LDE/DATE
D								
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REVIEWER:	E. Leiby			
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- B. Pre-development analysis - Peak Flows for Channel Design
- C. Pre-development analysis - FLO-2D Graphical Results for Velocity and Depth
- D. Output Results for Pre-Development Analysis
- E. Channel Locations
- F. Post-development analysis - FLO-2D Graphical Results for Depth
- G. Post-development analysis – Downstream Flooding
- H. Post-development analysis – Channel and Floodplain Velocities
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- J. Elevation Data Information



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1.1 Introduction

Genesis Solar, LLC, is proposing a Solar Thermal Power Generating Project to be built near Ford Dry Lake in Riverside County, State of California. The Project site will be located in the Colorado Desert between the communities of Blythe, CA (approximately 24 miles east) and Desert Center, CA (approximately 27 miles west).

The purpose of this calculation is to perform a pre-development flood analysis using FLO-2D and examine the effects of the 100-yr storm in the area (mainly upstream) of the proposed solar plant site. Following this, perform a post-development flood analysis by approximately locating diversion channels around the proposed site and examine the effects of the diversion channels at the downstream end. The velocities at the upstream and downstream end of the channels will be reviewed so that proper erosion control methods are implemented.

1.2 Hydrologic Setting

The project site lies near the toe of alluvial fans emanating from the Palen Mountains to the north and the McCoy Mountains to the east. The eastern portion of the Site is underlain by a broad valley-axial drainage that extends southward between these mountains and drains to the Ford Dry Lake playa located about 1 mile south of the Site.

1.3 Site Development

From Reference 1, off-site storm water flows are sourced from a large area to the north of the Site (approximately 91,627 acres). Due to the magnitude and type of terrain, a main concern is the presence of storm flushed flood events. In order to address this concern, the runoff originated by the upstream areas will be diverted around Units 1 and 2 using berms and channels capable of conveying flows for a 100-yr, 24 hour storm event.

1.4 FLO-2D Analysis

1.4.1 Pre-development analysis

FLO-2D was used to evaluate maximum depths and velocities from a 100-yr storm from using the entire watershed just north of the proposed project site. The pre-development run was done using a grid system of 200 ft by 200 ft using elevation data from 30 meter DEM (Reference 2) and the input parameters as identified below.

A. Soils

From Reference 3, the soils on the site are classified as follows:

<u>Soil Unit</u>	<u>Description</u>
CA907	Rock Outcrop-Tecopa-Lithic-Torriorthents
CA913	Rock Outcrop-Lithic-Torriorthents-Calvista
CA918	Rock Outcrop-Laposa-Quiltosa
CA921	Rositas-Carsitas-DuneLand
CA923	Playas-Rositas-Meloland
CA927	Gunsight-Rillito-Chuckwalla
CA928	Cherioni-Hyder-Cipriano

See Attachment A.

B. Manning's N-value(s)



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Based on engineering judgment the value used in the run is 0.025, conservatively. Note that this value normally corresponds to bare soils with minimum vegetation. The watershed consists of steep slopes from the Palen Mountains to the north and the McCoy Mountains to the east.

In the FLO-2D reference manual (Reference 4), it is stated that the software will automatically adjust its n-values based on the flow depth that is calculated while running the simulation. For example, if the shallow n-value is set to 0.2, then at a flow depth of 0.2 ft or lower, the program adjusts the n-value to 0.2.

C. Infiltration parameters

Based on the soil descriptions, the hydrologic soil group for the watershed and the project site is roughly D. From Table 2-2d in Reference 5, for Desert Shrub (poor) condition, the CN-value is 88. From Table 4-1 in Reference 5, the initial abstraction is 0.273 for a CN of 88. These infiltration parameters are used for the entire watershed, conservatively.

D. Rainfall

Based on the Site location, the (NRCS/SCS) Type II rainfall distribution was used when running FLO-2D. For the 100 year, 24 hour storm event, the rainfall is 3.51 inches (Reference 6). In FLO-2D, the rainfall fraction versus time is entered in the RAIN.DAT file.

E. Results

With the conservative input parameters used in the pre-development run, the total Qpeak is still less than the 10,022 cfs that was calculated using TR-55 methods (Reference 1). The total Qpeak is approximately 9,300 cfs. In FLO-2D, floodplain cross sections are taken within the grid elements around the upstream perimeter of the proposed site so that the FLO-2D model calculates a hydrograph and compiles hydraulic results for the flow across the cross section. The time to peak is between 21 and 22 hours, which is greater than the time of concentration calculated in Reference 1. The maximum depth at those grid elements ranges from 0.15 ft to 1.01 ft and the maximum volume ranges from 4.99 acre-ft to 188.73 acre-ft. As seen from the floodplain cross section layout and the hydrograph results from FLO-2D, the maximum flow, depth and volume occur at cross-section 3. See Attachment B. Therefore, each diversion channel will be designed properly to handle the runoff that flows in that direction.

In Attachment C, upstream velocities are shown in a graphical view so that the non-erosive channel lining, such as soil-cement, and other erosion control methods are utilized during construction. From the graphical sketch, the maximum velocities in the area of the proposed site are between the two solar modules, ranging from 2 fps to 7 fps. Additionally, a depth profile plot around the proposed site is also included in Attachment C.

A summary output file is given in Attachment D.

1.4.2 Post-development analysis



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Using all the same input parameters from the pre-development run; a post-development analysis was done in FLO-2D to evaluate the maximum depths and velocities from a 100-yr storm through the proposed diversion channels. The run was also done using a grid system of 200 ft x 200 ft. In FLO-2D, channels are given the actual dimensions, therefore can be a part of a grid element. In addition, levees are used to artificially create a wall so that the upstream flow does not run on to the solar site.

**A. Channel Locations**

Channel A flows from east to west and is located north of Module A. Channel B is located northeast of the Module A and from a common high point with Channel A, this channel drains southeast. Channel C is located north of the Module B and drains from east to west. Channels B and C both tie in between Modules A & B and this combined Channel B/C flows south through the middle of the site. Channel D runs southeast from a common high point with Channel C. This channel drains the area north and east of Module B. See Attachment E.

**B. Channel Geometry & Lining**

Based on the pre-development flow results, the channels were given an average width in FLO-2D. However, in actuality, the channels will be tapered starting at the upstream end with a minimum width of 20 ft. The depth in each channel varies so that a constant slope can be achieved. At the downstream end, the channel matches the existing grade. The width used for Channel A, B, C, B/C, and D is 25 ft, 63 ft, 29 ft, 114 ft, and 72 ft respectively. The channels will be lined with soil-cement; therefore, a Manning's N-value of 0.022 is used.

**C. Levee Geometry**

As stated previously, the levees create an artificial barrier, but they represent the proposed berms that will be constructed around the proposed plant to divert the water. The levees are set at an elevation of 400 ft, however, in final design, each area will be graded so that the depth of flow in each channel plus freeboard does not overtop and flood the solar site.

**D. Channel Flow Depths & Downstream Flooding**

The maximum channel depths are shown in Attachment F. In the pre-development analysis, the depths at the downstream end of each channel outlet is approximately 0.5 ft, 0.9 ft, and 0.6 ft for Channel A, B/C, and D, respectively. From the post-development analysis, the flows are increased at these outlet points to approximately 0.8 ft, 2.6 ft, and 1.0 ft for Channel A, B/C, and D, respectively. The major increase is for Channel B/C; however, all channels will be modified to decrease the final flow depths at the downstream end. Furthermore, as seen from the results in Attachment G, some portions of the project site are impacted due to the flows in the diversion channels. This can/will be eliminated with berms to prevent water from entering the site.

**E. Channel Downstream Velocities**

In the pre-development analysis, the velocity at the downstream end of each channel outlet is approximately 0.52 fps, 1.8 fps, and 0.52 fps for Channel A, B/C, and D, respectively. From the post-development analysis, the velocities are increased at these outlet points to approximately 2.6 fps, 5.2 fps, and 2.7 fps for Channel A, B/C, and D, respectively (Attachment H). For bare soils,



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these final velocities will cause erosion. Appropriate form of energy dissipation (tapering, riprap, etc.) will be utilized to slow down these velocities and will be detailed on final design drawings.

A summary output file results is given in Attachment I.

**1.5 Results and Conclusions**

Review of the FLO-2D output identified abnormalities caused by the type of topography data that was used. The topography file had rounded off elevations to the nearest meter. Therefore, when it was brought into the FLO-2D Grid Developer System, some of the grid element elevations (ground surface elevations) were exactly the same and it also created a 'benched' topography. See Attachment J. To resolve this problem, better topography information will need to be used as the elevation input data.

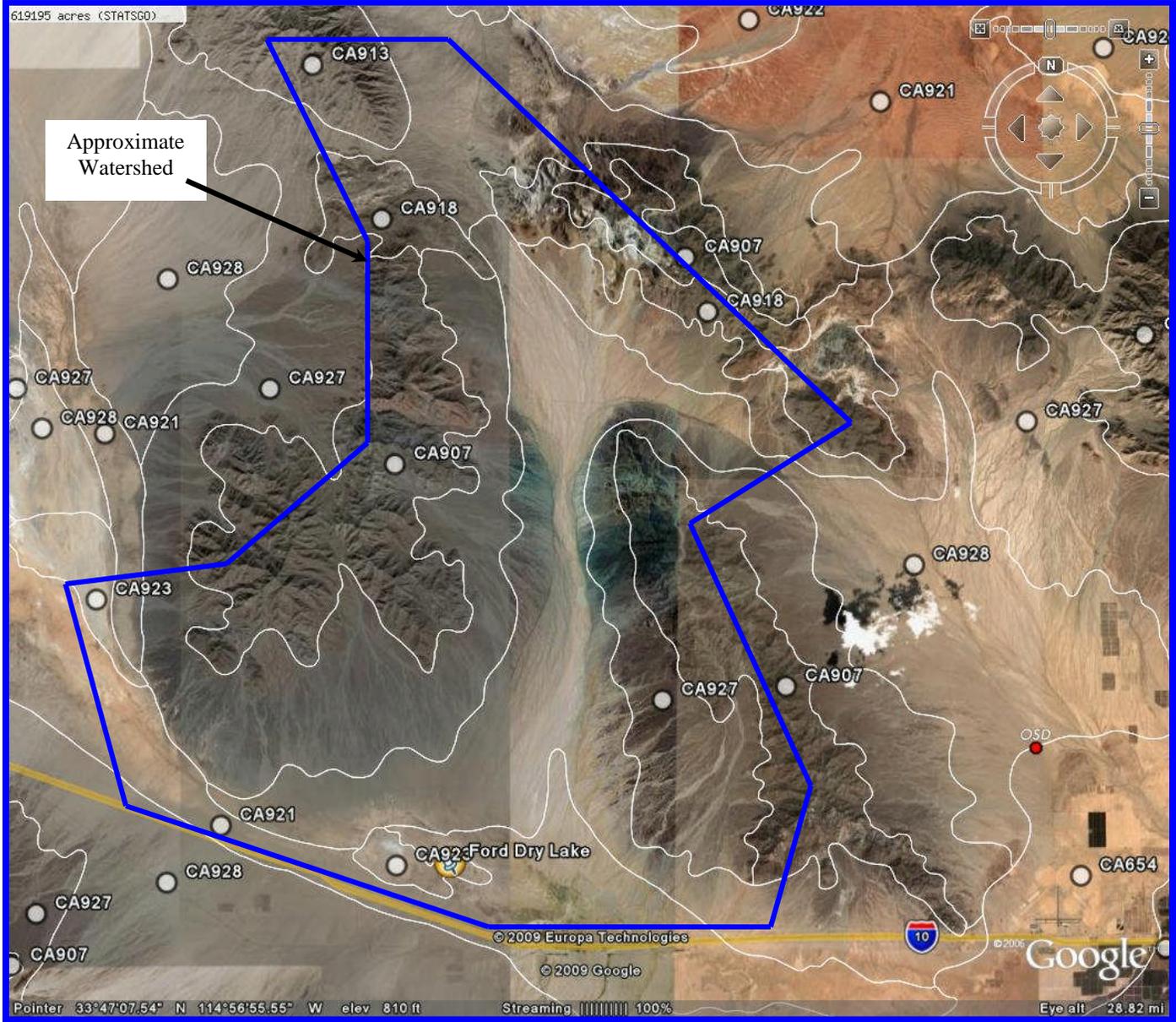
Based on the results, the diversion channels will require additional modifications so that the velocities at the downstream end of the channels are reduced further and so that the concentrated flows in each channel will spread out and return to existing downstream conditions to the extent possible. Additionally, the results show that some portions of the project site will be impacted due to the flows in the diversion channels.

The modifications and improvements to the channels will include (but not limited to):

1. Channel geometry, such as width and depth will be optimized and refined in the FLO-2D model. For example, channels in the current post-development analysis are given a constant width; however, the actual 'final' design will propose tapered channels along the length of each channel. This will minimize the upstream channel widths/depths, maintain a constant slope against the flat terrain, and reduce unnecessary earthwork.
2. The diversion channels will be designed with flared or widened end sections for appropriate lengths to reduce potential scouring velocities downstream of the channels to approximate existing downstream conditions. Widening of the channels at the discharge will also serve to spread out the flows as much as possible to minimize the amount of downstream undisturbed areas that will be cutoff from future flows.
3. If necessary, modifications to the drainage within existing general arrangement and site layout will be implemented to allow to extend diversion channels in the appropriate direction to facilitate the spread of flows to areas that may be potentially cutoff from future flows and also reduce velocities. For example, extend the outlet of Channel A further southwest to capture more run-on from the mountains to the north and west of the project site. In the case of Channel B/C, extend the channel further west into Module A and south into Module B to split the total flow and send it towards other downstream areas.
4. At the outlet of Channel A, Channel B/C and Channel D, additional engineering and erosion controls will be implemented to distribute the flows to approximate existing conditions. The erosion controls can be modeled in FLO-2D using higher n-values for the grid elements located at the end of the channel outlets.

# **ATTACHMENT A**

FORD DRY LAKE – SOILS MAP  
SOILS IN APPROXIMATE WATERSHED





Selected mapunit: **CA907**

Click on a soil type to see interp. data.

Soil Type			Percentage of Mapunit	taxclass_unique
<a href="#">TECOPA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	10	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), THERMIC
<a href="#">LITHIC TORRIORTHENTS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	8	LITHIC TORRIORTHENTS
<a href="#">LITHIC TORRIORTHENTS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	4	LITHIC TORRIORTHENTS
<a href="#">TECOPA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	3	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), THERMIC
<a href="#">CALVISTA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	3	LITHIC CAMBORTHIDS, LOAMY, MIXED, THERMIC
<a href="#">TRIGGER</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	LITHIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), THERMIC
<a href="#">SPARKHULE</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	LITHIC HAPLARGIDS, LOAMY, MIXED, THERMIC
<a href="#">CALVISTA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	LITHIC CAMBORTHIDS, LOAMY, MIXED, THERMIC
<a href="#">TRIGGER</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), THERMIC
<a href="#">UPSPRING</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), THERMIC
<a href="#">ST. THOMAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, CARBONATIC, THERMIC
<a href="#">VIRGIN PEAK</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC HAPLUSTOLLS, LOAMY-SKELETAL, MIXED, MESIC
<a href="#">SPARKHULE</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC HAPLARGIDS, LOAMY, MIXED, THERMIC
<a href="#">ARIZO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIORTHENTS, SANDY-SKELETAL, MIXED, THERMIC
<a href="#">CAJON</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIPSAMMENTS, MIXED, THERMIC



Selected mapunit: **CA913**

Click on a soil type to see interp. data.

Soil Type			Percentage of Mapunit	taxclass_unique
<a href="#">LITHIC TORRIORTHENTS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	15	LITHIC TORRIORTHENTS
<a href="#">LITHIC TORRIORTHENTS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	9	LITHIC TORRIORTHENTS
<a href="#">CALVISTA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	LITHIC CAMBORTHIDS, LOAMY, MIXED, THERMIC
<a href="#">CALVISTA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	LITHIC CAMBORTHIDS, LOAMY, MIXED, THERMIC
<a href="#">HI VISTA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	TYPIC HAPLARGIDS, FINE-LOAMY, MIXED, THERMIC
<a href="#">TECOPA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), THERMIC
<a href="#">HI VISTA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC HAPLARGIDS, FINE-LOAMY, MIXED, THERMIC
<a href="#">TECOPA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), THERMIC
<a href="#">TRIGGER</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	LITHIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), THERMIC
<a href="#">ARIZO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIORTHENTS, SANDY-SKELETAL, MIXED, THERMIC
<a href="#">CAJON</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIPSAMMENTS, MIXED, THERMIC
<a href="#">KNOB HILL</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC CALCIORTHIDS, SANDY, MIXED, THERMIC
<a href="#">BITTER</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, THERMIC

*BITTER**(Official Series  
Description)**(Nitrate Leaching  
Index)*

1

*TYPIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, THERMIC*



Selected mapunit: **CA918**

Click on a soil type to see interp. data.

Soil Type			Percentage of Mapunit	taxclass_unique
<a href="#">LAPOSA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	16	TYPIC CAMBORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">QUILOTOSA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	10	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">VAIVA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	8	LITHIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">QUILOTOSA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	6	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">VAIVA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	LITHIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">LOMITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	LITHIC CAMBORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">LOMITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	4	LITHIC CAMBORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">LAPOSA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	3	TYPIC CAMBORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">ROSITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC
<a href="#">CARRIZO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	TYPIC TORRIORTHENTS, SANDY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">LAVEEN</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	2	TYPIC CALCIORTHIDS, COARSE-LOAMY, MIXED, HYPERTHERMIC
<a href="#">GUNSIGHT</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC CALCIORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">CHUCKAWALLA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC



Selected mapunit: **CA921**

Click on a soil type to see interp. data.

	Soil Type		Percentage of Mapunit	taxclass_unique
<a href="#">CARSITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	26	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC
<a href="#">ROSITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	25	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC
<a href="#">ROSITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	10	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC
<a href="#">SUPERSTITION</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC CALCIORTHIDS, SANDY, MIXED, HYPERTHERMIC
<a href="#">CARRIZO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC TORRIORTHENTS, SANDY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">MYOMA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	3	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC
<a href="#">ANTHO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIFLUVENTS, COARSE-LOAMY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">MELOLAND</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIFLUVENTS, COARSE-LOAMY OVER CLAYEY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">NILAND</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIFLUVENTS, SANDY OVER CLAYEY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">SALTON</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	AQUIC TORRIORTHENTS, FINE-SILTY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">CHUCKAWALLA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">ROSITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC



Selected mapunit: **CA923**

Click on a soil type to see interp. data.

Soil Type			Percentage of Mapunit	taxclass_unique
<a href="#">ROSITAS</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC TORRIPSAMMENTS, MIXED, HYPERTHERMIC
<a href="#">SALTON</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	AQUIC TORRIORTHENTS, FINE-SILTY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">MELOLAND</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIFLUVENTS, COARSE-LOAMY OVER CLAYEY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">NILAND</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIFLUVENTS, SANDY OVER CLAYEY, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">MELOLAND</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	1	TYPIC TORRIFLUVENTS, COARSE-LOAMY OVER CLAYEY, MIXED (CALCAREOUS), HYPERTHERMIC



Selected mapunit: **CA927**

Click on a soil type to see interp. data.

Soil Type			Percentage of Mapunit	taxclass_unique
<a href="#">GUNSIGHT</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	27	TYPIC CALCIORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">RILLITO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	19	TYPIC CALCIORTHIDS, COARSE-LOAMY, MIXED, HYPERTHERMIC
<a href="#">CHUCKAWALLA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	8	TYPIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">CARRIZO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	6	TYPIC TORRIORTHENTS, SANDY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">MOMOLI</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC CAMBORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">CIPRIANO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC DURORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC, SHALLOW
<a href="#">DENURE</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC CAMBORTHIDS, COARSE-LOAMY, MIXED, HYPERTHERMIC
<a href="#">BEELINE</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), HYPERTHERMIC, SHALLOW
<a href="#">MOHALL</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC HAPLARGIDS, FINE-LOAMY, MIXED, HYPERTHERMIC
<a href="#">PINAMT</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC
<a href="#">TREMANT</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC HAPLARGIDS, FINE-LOAMY, MIXED, HYPERTHERMIC
<a href="#">GILMAN</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	5	TYPIC TORRIFLUENTS, COARSE-LOAMY, MIXED (CALCAREOUS), HYPERTHERMIC



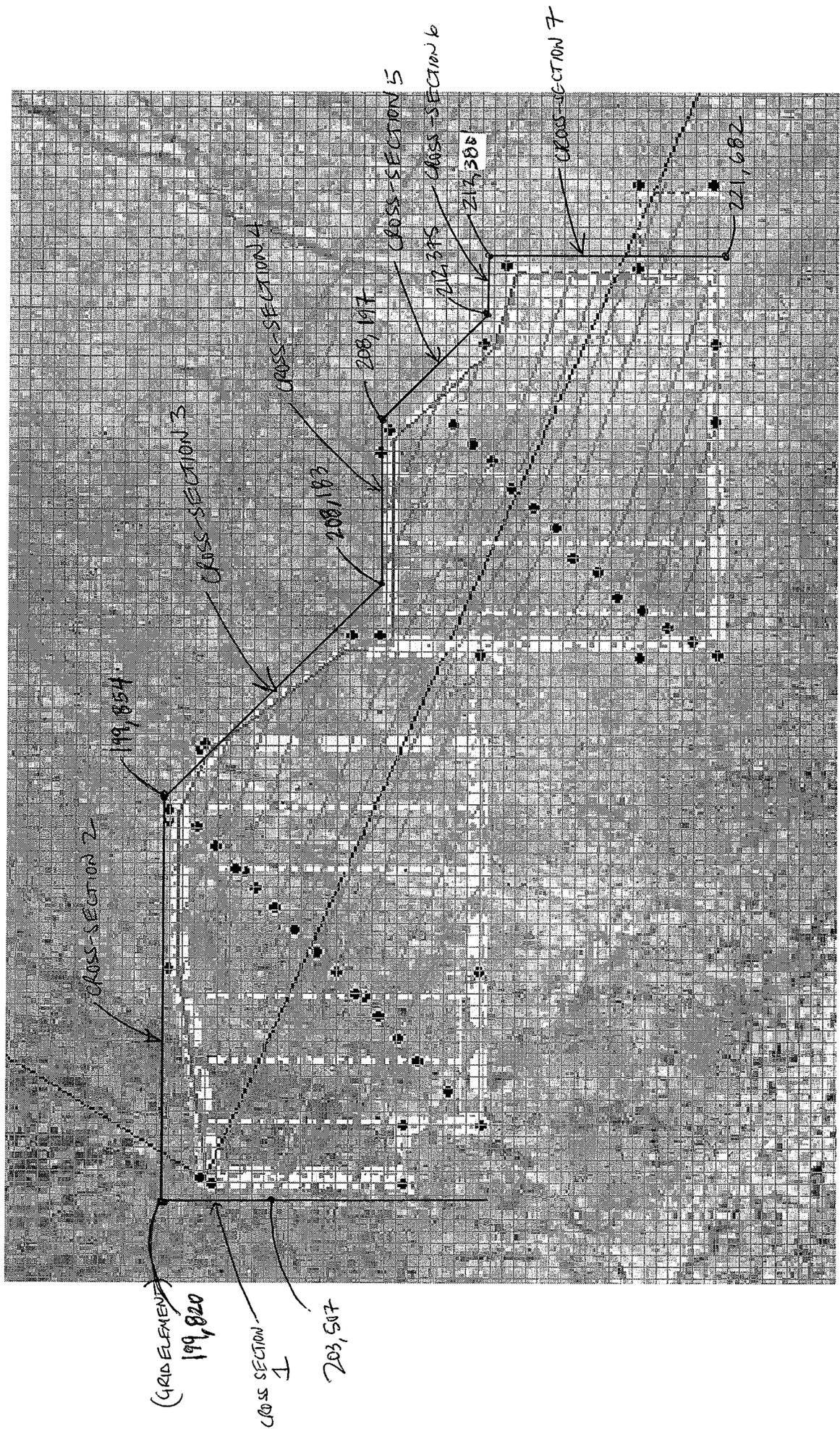
Selected mapunit: **CA928**

Click on a soil type to see interp. data.

Soil Type			Percentage of Mapunit	taxclass_unique
<a href="#">CHERIONI</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	25	TYPIC DURORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC, SHALLOW
<a href="#">HYDER</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	25	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">CIPRIANO</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	25	TYPIC DURORTHIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC, SHALLOW
<a href="#">QUILOTOSA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	15	LITHIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), HYPERTHERMIC
<a href="#">VAIVA</a>	<a href="#">(Official Series Description)</a>	<a href="#">(Nitrate Leaching Index)</a>	10	LITHIC HAPLARGIDS, LOAMY-SKELETAL, MIXED, HYPERTHERMIC

## **ATTACHMENT B**

FLOODPLAIN CROSS SECTIONS  
(PRELIMINARY RUN)



THE MAXIMUM DISCHARGE FROM CROSS SECTION 1 IS: 712.26 CFS AT TIME:  
21.03 HOURS

THE MAXIMUM DISCHARGE FROM NODE 199820 IS: 19.23 CFS AT TIME 18.02 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.54 FEET AND A MAXIMUM VOLUME OF:  
14.22 AF

THE MAXIMUM DISCHARGE FROM NODE 200280 IS: 21.19 CFS AT TIME 18.63 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.45 FEET AND A MAXIMUM VOLUME OF:  
16.33 AF

THE MAXIMUM DISCHARGE FROM NODE 200741 IS: 33.02 CFS AT TIME 18.63 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.25 FEET AND A MAXIMUM VOLUME OF:  
26.97 AF

THE MAXIMUM DISCHARGE FROM NODE 201202 IS: 23.24 CFS AT TIME 18.40 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.53 FEET AND A MAXIMUM VOLUME OF:  
17.21 AF

THE MAXIMUM DISCHARGE FROM NODE 201663 IS: 26.99 CFS AT TIME 18.79 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.30 FEET AND A MAXIMUM VOLUME OF:  
19.99 AF

THE MAXIMUM DISCHARGE FROM NODE 202124 IS: 35.79 CFS AT TIME 18.84 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.29 FEET AND A MAXIMUM VOLUME OF:  
26.26 AF

THE MAXIMUM DISCHARGE FROM NODE 202585 IS: 37.49 CFS AT TIME 18.51 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:  
21.16 AF

THE MAXIMUM DISCHARGE FROM NODE 203046 IS: 25.55 CFS AT TIME 19.01 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.54 FEET AND A MAXIMUM VOLUME OF:  
18.93 AF

THE MAXIMUM DISCHARGE FROM NODE 203507 IS: 24.87 CFS AT TIME 19.08 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
18.29 AF

THE MAXIMUM DISCHARGE FROM NODE 203969 IS: 29.23 CFS AT TIME 18.62 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:  
17.35 AF

THE MAXIMUM DISCHARGE FROM NODE 204431 IS: 22.81 CFS AT TIME 19.68 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.53 FEET AND A MAXIMUM VOLUME OF:  
16.70 AF

THE MAXIMUM DISCHARGE FROM NODE 204893 IS: 24.51 CFS AT TIME 18.94 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
16.63 AF

THE MAXIMUM DISCHARGE FROM NODE 205355 IS: 24.73 CFS AT TIME 20.81 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.58 FEET AND A MAXIMUM VOLUME OF:  
16.90 AF

THE MAXIMUM DISCHARGE FROM NODE 205817 IS: 25.62 CFS AT TIME 19.37 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.57 FEET AND A MAXIMUM VOLUME OF:  
18.11 AF

THE MAXIMUM DISCHARGE FROM NODE 206279 IS: 29.04 CFS AT TIME 18.74 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.56 FEET AND A MAXIMUM VOLUME OF:  
19.42 AF

THE MAXIMUM DISCHARGE FROM NODE 206742 IS: 24.78 CFS AT TIME 19.93 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:

19.88 AF

THE MAXIMUM DISCHARGE FROM NODE 207205 IS: 25.07 CFS AT TIME 19.93 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.23 FEET AND A MAXIMUM VOLUME OF:  
20.08 AF

THE MAXIMUM DISCHARGE FROM NODE 207668 IS: 18.72 CFS AT TIME 20.24 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.22 FEET AND A MAXIMUM VOLUME OF:  
14.79 AF

THE MAXIMUM DISCHARGE FROM NODE 208131 IS: 27.03 CFS AT TIME 20.64 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.61 FEET AND A MAXIMUM VOLUME OF:  
19.50 AF

THE MAXIMUM DISCHARGE FROM NODE 208594 IS: 28.45 CFS AT TIME 18.92 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.60 FEET AND A MAXIMUM VOLUME OF:  
20.83 AF

THE MAXIMUM DISCHARGE FROM NODE 209057 IS: 30.30 CFS AT TIME 20.62 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.58 FEET AND A MAXIMUM VOLUME OF:  
21.75 AF

THE MAXIMUM DISCHARGE FROM NODE 209520 IS: 35.65 CFS AT TIME 20.61 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.57 FEET AND A MAXIMUM VOLUME OF:  
22.95 AF

THE MAXIMUM DISCHARGE FROM NODE 209984 IS: 34.45 CFS AT TIME 22.22 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.31 FEET AND A MAXIMUM VOLUME OF:  
27.29 AF

THE MAXIMUM DISCHARGE FROM NODE 210448 IS: 39.48 CFS AT TIME 22.31 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.33 FEET AND A MAXIMUM VOLUME OF:  
30.59 AF

THE MAXIMUM DISCHARGE FROM NODE 210911 IS: 33.95 CFS AT TIME 22.51 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.63 FEET AND A MAXIMUM VOLUME OF:  
23.73 AF

THE MAXIMUM DISCHARGE FROM NODE 211374 IS: 31.65 CFS AT TIME 22.52 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.62 FEET AND A MAXIMUM VOLUME OF:  
21.96 AF

THE MAXIMUM DISCHARGE FROM NODE 211837 IS: 35.51 CFS AT TIME 21.02 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.60 FEET AND A MAXIMUM VOLUME OF:  
22.15 AF

THE MAXIMUM DISCHARGE FROM NODE 212300 IS: 29.89 CFS AT TIME 20.44 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.58 FEET AND A MAXIMUM VOLUME OF:  
19.57 AF

THE MAXIMUM DISCHARGE FROM CROSS SECTION 2 IS: 945.52 CFS AT TIME:  
20.80 HOURS

THE MAXIMUM DISCHARGE FROM NODE 199820 IS: 19.23 CFS AT TIME 18.02 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.54 FEET AND A MAXIMUM VOLUME OF:  
14.22 AF

THE MAXIMUM DISCHARGE FROM NODE 199821 IS: 20.09 CFS AT TIME 18.05 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.54 FEET AND A MAXIMUM VOLUME OF:  
14.68 AF

THE MAXIMUM DISCHARGE FROM NODE 199822 IS: 16.03 CFS AT TIME 18.61 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.24 FEET AND A MAXIMUM VOLUME OF:  
10.60 AF

THE MAXIMUM DISCHARGE FROM NODE 199823 IS: 5.09 CFS AT TIME 18.88 HOURS

WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.15 FEET AND A MAXIMUM VOLUME OF:  
4.99 AF

THE MAXIMUM DISCHARGE FROM NODE 199824 IS: 21.24 CFS AT TIME 18.52 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.39 FEET AND A MAXIMUM VOLUME OF:  
15.33 AF

THE MAXIMUM DISCHARGE FROM NODE 199825 IS: 37.87 CFS AT TIME 18.18 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.57 FEET AND A MAXIMUM VOLUME OF:  
27.09 AF

THE MAXIMUM DISCHARGE FROM NODE 199826 IS: 37.81 CFS AT TIME 17.94 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.58 FEET AND A MAXIMUM VOLUME OF:  
27.52 AF

THE MAXIMUM DISCHARGE FROM NODE 199827 IS: 27.86 CFS AT TIME 18.50 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.36 FEET AND A MAXIMUM VOLUME OF:  
22.95 AF

THE MAXIMUM DISCHARGE FROM NODE 199828 IS: 29.96 CFS AT TIME 18.49 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.28 FEET AND A MAXIMUM VOLUME OF:  
24.90 AF

THE MAXIMUM DISCHARGE FROM NODE 199829 IS: 29.00 CFS AT TIME 18.52 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.24 FEET AND A MAXIMUM VOLUME OF:  
23.73 AF

THE MAXIMUM DISCHARGE FROM NODE 199830 IS: 22.95 CFS AT TIME 18.72 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
12.49 AF

THE MAXIMUM DISCHARGE FROM NODE 199831 IS: 24.44 CFS AT TIME 17.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
18.15 AF

THE MAXIMUM DISCHARGE FROM NODE 199832 IS: 24.41 CFS AT TIME 18.35 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
19.29 AF

THE MAXIMUM DISCHARGE FROM NODE 199833 IS: 24.46 CFS AT TIME 18.62 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.21 FEET AND A MAXIMUM VOLUME OF:  
19.34 AF

THE MAXIMUM DISCHARGE FROM NODE 199834 IS: 24.21 CFS AT TIME 18.49 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.22 FEET AND A MAXIMUM VOLUME OF:  
19.10 AF

THE MAXIMUM DISCHARGE FROM NODE 199835 IS: 24.37 CFS AT TIME 18.58 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.24 FEET AND A MAXIMUM VOLUME OF:  
19.00 AF

THE MAXIMUM DISCHARGE FROM NODE 199836 IS: 25.92 CFS AT TIME 18.87 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.28 FEET AND A MAXIMUM VOLUME OF:  
20.94 AF

THE MAXIMUM DISCHARGE FROM NODE 199837 IS: 25.72 CFS AT TIME 19.82 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.39 FEET AND A MAXIMUM VOLUME OF:  
21.74 AF

THE MAXIMUM DISCHARGE FROM NODE 199838 IS: 26.42 CFS AT TIME 20.34 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.52 FEET AND A MAXIMUM VOLUME OF:  
21.09 AF

THE MAXIMUM DISCHARGE FROM NODE 199839 IS: 23.25 CFS AT TIME 20.24 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.54 FEET AND A MAXIMUM VOLUME OF:  
20.43 AF

THE MAXIMUM DISCHARGE FROM NODE 199840 IS: 23.94 CFS AT TIME 20.74 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.54 FEET AND A MAXIMUM VOLUME OF:  
22.09 AF

THE MAXIMUM DISCHARGE FROM NODE 199841 IS: 32.09 CFS AT TIME 19.13 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:  
22.81 AF

THE MAXIMUM DISCHARGE FROM NODE 199842 IS: 37.93 CFS AT TIME 19.12 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:  
23.10 AF

THE MAXIMUM DISCHARGE FROM NODE 199843 IS: 36.21 CFS AT TIME 18.83 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.56 FEET AND A MAXIMUM VOLUME OF:  
21.38 AF

THE MAXIMUM DISCHARGE FROM NODE 199844 IS: 18.93 CFS AT TIME 21.06 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.40 FEET AND A MAXIMUM VOLUME OF:  
15.59 AF

THE MAXIMUM DISCHARGE FROM NODE 199845 IS: 19.46 CFS AT TIME 21.43 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.22 FEET AND A MAXIMUM VOLUME OF:  
16.04 AF

THE MAXIMUM DISCHARGE FROM NODE 199846 IS: 19.84 CFS AT TIME 20.97 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
12.76 AF

THE MAXIMUM DISCHARGE FROM NODE 199847 IS: 18.56 CFS AT TIME 20.68 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
12.59 AF

THE MAXIMUM DISCHARGE FROM NODE 199848 IS: 26.29 CFS AT TIME 23.98 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.32 FEET AND A MAXIMUM VOLUME OF:  
21.99 AF

THE MAXIMUM DISCHARGE FROM NODE 199849 IS: 28.51 CFS AT TIME 23.97 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.52 FEET AND A MAXIMUM VOLUME OF:  
22.93 AF

THE MAXIMUM DISCHARGE FROM NODE 199850 IS: 11.94 CFS AT TIME 20.03 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.57 FEET AND A MAXIMUM VOLUME OF:  
9.30 AF

THE MAXIMUM DISCHARGE FROM NODE 199851 IS: 31.81 CFS AT TIME 18.43 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.63 FEET AND A MAXIMUM VOLUME OF:  
20.35 AF

THE MAXIMUM DISCHARGE FROM NODE 199852 IS: 47.42 CFS AT TIME 23.88 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.67 FEET AND A MAXIMUM VOLUME OF:  
37.35 AF

THE MAXIMUM DISCHARGE FROM NODE 199853 IS: 137.22 CFS AT TIME 20.80 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.50 FEET AND A MAXIMUM VOLUME OF:  
82.21 AF

THE MAXIMUM DISCHARGE FROM NODE 199854 IS: 81.13 CFS AT TIME 24.00 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.46 FEET AND A MAXIMUM VOLUME OF:  
70.93 AF

THE MAXIMUM DISCHARGE FROM CROSS SECTION 3 IS: 3254.21 CFS AT TIME:  
22.50 HOURS

THE MAXIMUM DISCHARGE FROM NODE 199854 IS: 118.48 CFS AT TIME 24.00 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.46 FEET AND A MAXIMUM VOLUME OF:  
103.41 AF

THE MAXIMUM DISCHARGE FROM NODE 200315 IS: 259.40 CFS AT TIME 20.68 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.51 FEET AND A MAXIMUM VOLUME OF:  
163.13 AF

THE MAXIMUM DISCHARGE FROM NODE 200777 IS: 172.86 CFS AT TIME 23.97 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.78 FEET AND A MAXIMUM VOLUME OF:  
132.06 AF

THE MAXIMUM DISCHARGE FROM NODE 201239 IS: 110.30 CFS AT TIME 23.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.69 FEET AND A MAXIMUM VOLUME OF:  
77.21 AF

THE MAXIMUM DISCHARGE FROM NODE 201701 IS: 117.59 CFS AT TIME 22.45 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.67 FEET AND A MAXIMUM VOLUME OF:  
72.64 AF

THE MAXIMUM DISCHARGE FROM NODE 202163 IS: 119.90 CFS AT TIME 22.49 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.66 FEET AND A MAXIMUM VOLUME OF:  
64.78 AF

THE MAXIMUM DISCHARGE FROM NODE 202625 IS: 269.85 CFS AT TIME 22.43 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.59 FEET AND A MAXIMUM VOLUME OF:  
145.01 AF

THE MAXIMUM DISCHARGE FROM NODE 203087 IS: 149.21 CFS AT TIME 22.57 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.34 FEET AND A MAXIMUM VOLUME OF:  
88.14 AF

THE MAXIMUM DISCHARGE FROM NODE 203549 IS: 374.08 CFS AT TIME 21.83 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.53 FEET AND A MAXIMUM VOLUME OF:  
188.73 AF

THE MAXIMUM DISCHARGE FROM NODE 204012 IS: 72.96 CFS AT TIME 22.53 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.43 FEET AND A MAXIMUM VOLUME OF:  
35.16 AF

THE MAXIMUM DISCHARGE FROM NODE 204475 IS: 48.12 CFS AT TIME 22.55 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.29 FEET AND A MAXIMUM VOLUME OF:  
30.52 AF

THE MAXIMUM DISCHARGE FROM NODE 204938 IS: 246.00 CFS AT TIME 21.82 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.52 FEET AND A MAXIMUM VOLUME OF:  
102.36 AF

THE MAXIMUM DISCHARGE FROM NODE 205401 IS: 306.83 CFS AT TIME 21.82 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 1.01 FEET AND A MAXIMUM VOLUME OF:  
170.21 AF

THE MAXIMUM DISCHARGE FROM NODE 205864 IS: 271.80 CFS AT TIME 21.87 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.97 FEET AND A MAXIMUM VOLUME OF:  
149.65 AF

THE MAXIMUM DISCHARGE FROM NODE 206327 IS: 165.92 CFS AT TIME 21.90 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.87 FEET AND A MAXIMUM VOLUME OF:  
83.93 AF

THE MAXIMUM DISCHARGE FROM NODE 206791 IS: 178.10 CFS AT TIME 21.89 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.79 FEET AND A MAXIMUM VOLUME OF:  
74.02 AF

THE MAXIMUM DISCHARGE FROM NODE 207255 IS: 195.57 CFS AT TIME 21.91 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.78 FEET AND A MAXIMUM VOLUME OF:  
92.96 AF

THE MAXIMUM DISCHARGE FROM NODE 207719 IS: 175.28 CFS AT TIME 21.94 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.76 FEET AND A MAXIMUM VOLUME OF:

80.42 AF

THE MAXIMUM DISCHARGE FROM NODE 208183 IS: 168.97 CFS AT TIME 22.02 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.70 FEET AND A MAXIMUM VOLUME OF:  
64.15 AF

THE MAXIMUM DISCHARGE FROM CROSS SECTION 4 IS: 1281.25 CFS AT TIME:  
22.20 HOURS

THE MAXIMUM DISCHARGE FROM NODE 208183 IS: 112.52 CFS AT TIME 21.97 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.70 FEET AND A MAXIMUM VOLUME OF:  
41.75 AF

THE MAXIMUM DISCHARGE FROM NODE 208184 IS: 95.45 CFS AT TIME 21.90 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.71 FEET AND A MAXIMUM VOLUME OF:  
36.74 AF

THE MAXIMUM DISCHARGE FROM NODE 208185 IS: 119.58 CFS AT TIME 21.90 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.75 FEET AND A MAXIMUM VOLUME OF:  
35.36 AF

THE MAXIMUM DISCHARGE FROM NODE 208186 IS: 131.89 CFS AT TIME 21.97 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.50 FEET AND A MAXIMUM VOLUME OF:  
32.21 AF

THE MAXIMUM DISCHARGE FROM NODE 208187 IS: 50.80 CFS AT TIME 21.97 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.35 FEET AND A MAXIMUM VOLUME OF:  
29.18 AF

THE MAXIMUM DISCHARGE FROM NODE 208188 IS: 254.57 CFS AT TIME 21.92 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.62 FEET AND A MAXIMUM VOLUME OF:  
95.13 AF

THE MAXIMUM DISCHARGE FROM NODE 208189 IS: 104.06 CFS AT TIME 22.10 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.50 FEET AND A MAXIMUM VOLUME OF:  
26.00 AF

THE MAXIMUM DISCHARGE FROM NODE 208190 IS: 93.41 CFS AT TIME 22.17 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.63 FEET AND A MAXIMUM VOLUME OF:  
34.09 AF

THE MAXIMUM DISCHARGE FROM NODE 208191 IS: 53.67 CFS AT TIME 22.01 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.66 FEET AND A MAXIMUM VOLUME OF:  
23.74 AF

THE MAXIMUM DISCHARGE FROM NODE 208192 IS: 70.97 CFS AT TIME 22.01 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.67 FEET AND A MAXIMUM VOLUME OF:  
28.87 AF

THE MAXIMUM DISCHARGE FROM NODE 208193 IS: 70.73 CFS AT TIME 21.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.67 FEET AND A MAXIMUM VOLUME OF:  
29.90 AF

THE MAXIMUM DISCHARGE FROM NODE 208194 IS: 64.44 CFS AT TIME 21.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.68 FEET AND A MAXIMUM VOLUME OF:  
27.57 AF

THE MAXIMUM DISCHARGE FROM NODE 208195 IS: 45.69 CFS AT TIME 22.18 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.61 FEET AND A MAXIMUM VOLUME OF:  
24.44 AF

THE MAXIMUM DISCHARGE FROM NODE 208196 IS: 36.21 CFS AT TIME 22.18 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.33 FEET AND A MAXIMUM VOLUME OF:  
23.30 AF

THE MAXIMUM DISCHARGE FROM NODE 208197 IS: 230.25 CFS AT TIME 21.87 HOURS

WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.53 FEET AND A MAXIMUM VOLUME OF:  
82.35 AF

THE MAXIMUM DISCHARGE FROM CROSS SECTION 5 IS: 1237.91 CFS AT TIME:  
22.02 HOURS

THE MAXIMUM DISCHARGE FROM NODE 208197 IS: 177.92 CFS AT TIME 21.87 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.53 FEET AND A MAXIMUM VOLUME OF:  
68.74 AF

THE MAXIMUM DISCHARGE FROM NODE 208661 IS: 102.24 CFS AT TIME 21.81 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.70 FEET AND A MAXIMUM VOLUME OF:  
34.86 AF

THE MAXIMUM DISCHARGE FROM NODE 209125 IS: 94.01 CFS AT TIME 22.01 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.66 FEET AND A MAXIMUM VOLUME OF:  
35.93 AF

THE MAXIMUM DISCHARGE FROM NODE 209589 IS: 145.79 CFS AT TIME 22.02 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.50 FEET AND A MAXIMUM VOLUME OF:  
57.14 AF

THE MAXIMUM DISCHARGE FROM NODE 210054 IS: 198.76 CFS AT TIME 21.98 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.51 FEET AND A MAXIMUM VOLUME OF:  
66.17 AF

THE MAXIMUM DISCHARGE FROM NODE 210519 IS: 75.78 CFS AT TIME 21.94 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.76 FEET AND A MAXIMUM VOLUME OF:  
35.01 AF

THE MAXIMUM DISCHARGE FROM NODE 210983 IS: 82.40 CFS AT TIME 21.87 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.70 FEET AND A MAXIMUM VOLUME OF:  
40.35 AF

THE MAXIMUM DISCHARGE FROM NODE 211447 IS: 124.06 CFS AT TIME 22.01 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.69 FEET AND A MAXIMUM VOLUME OF:  
60.24 AF

THE MAXIMUM DISCHARGE FROM NODE 211911 IS: 176.50 CFS AT TIME 22.00 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.64 FEET AND A MAXIMUM VOLUME OF:  
91.95 AF

THE MAXIMUM DISCHARGE FROM NODE 212375 IS: 180.73 CFS AT TIME 21.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.47 FEET AND A MAXIMUM VOLUME OF:  
90.83 AF

THE MAXIMUM DISCHARGE FROM CROSS SECTION 6 IS: 597.82 CFS AT TIME:  
21.64 HOURS

THE MAXIMUM DISCHARGE FROM NODE 212375 IS: 88.43 CFS AT TIME 21.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.47 FEET AND A MAXIMUM VOLUME OF:  
35.83 AF

THE MAXIMUM DISCHARGE FROM NODE 212376 IS: 173.91 CFS AT TIME 21.64 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:  
78.08 AF

THE MAXIMUM DISCHARGE FROM NODE 212377 IS: 119.35 CFS AT TIME 21.60 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.68 FEET AND A MAXIMUM VOLUME OF:  
47.73 AF

THE MAXIMUM DISCHARGE FROM NODE 212378 IS: 77.21 CFS AT TIME 21.57 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.70 FEET AND A MAXIMUM VOLUME OF:  
37.06 AF

THE MAXIMUM DISCHARGE FROM NODE 212379 IS: 66.89 CFS AT TIME 21.71 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.75 FEET AND A MAXIMUM VOLUME OF:  
38.36 AF

THE MAXIMUM DISCHARGE FROM NODE 212380 IS: 100.07 CFS AT TIME 21.63 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.82 FEET AND A MAXIMUM VOLUME OF:  
49.23 AF

THE MAXIMUM DISCHARGE FROM CROSS SECTION 7 IS: 1736.87 CFS AT TIME:  
21.93 HOURS

THE MAXIMUM DISCHARGE FROM NODE 212380 IS: 231.60 CFS AT TIME 21.62 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.82 FEET AND A MAXIMUM VOLUME OF:  
104.63 AF

THE MAXIMUM DISCHARGE FROM NODE 212844 IS: 118.34 CFS AT TIME 21.63 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.76 FEET AND A MAXIMUM VOLUME OF:  
58.74 AF

THE MAXIMUM DISCHARGE FROM NODE 213308 IS: 59.93 CFS AT TIME 21.71 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.64 FEET AND A MAXIMUM VOLUME OF:  
28.36 AF

THE MAXIMUM DISCHARGE FROM NODE 213772 IS: 46.75 CFS AT TIME 21.66 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.57 FEET AND A MAXIMUM VOLUME OF:  
25.57 AF

THE MAXIMUM DISCHARGE FROM NODE 214236 IS: 35.46 CFS AT TIME 21.68 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.20 FEET AND A MAXIMUM VOLUME OF:  
17.55 AF

THE MAXIMUM DISCHARGE FROM NODE 214700 IS: 52.79 CFS AT TIME 21.71 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.50 FEET AND A MAXIMUM VOLUME OF:  
25.29 AF

THE MAXIMUM DISCHARGE FROM NODE 215164 IS: 81.64 CFS AT TIME 21.73 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.62 FEET AND A MAXIMUM VOLUME OF:  
32.18 AF

THE MAXIMUM DISCHARGE FROM NODE 215629 IS: 153.79 CFS AT TIME 21.82 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.55 FEET AND A MAXIMUM VOLUME OF:  
54.89 AF

THE MAXIMUM DISCHARGE FROM NODE 216094 IS: 63.97 CFS AT TIME 22.75 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.41 FEET AND A MAXIMUM VOLUME OF:  
39.12 AF

THE MAXIMUM DISCHARGE FROM NODE 216559 IS: 86.09 CFS AT TIME 21.81 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.66 FEET AND A MAXIMUM VOLUME OF:  
48.66 AF

THE MAXIMUM DISCHARGE FROM NODE 217024 IS: 89.19 CFS AT TIME 21.80 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.62 FEET AND A MAXIMUM VOLUME OF:  
49.61 AF

THE MAXIMUM DISCHARGE FROM NODE 217489 IS: 138.14 CFS AT TIME 21.79 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.52 FEET AND A MAXIMUM VOLUME OF:  
66.37 AF

THE MAXIMUM DISCHARGE FROM NODE 217954 IS: 56.07 CFS AT TIME 21.92 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.31 FEET AND A MAXIMUM VOLUME OF:  
41.11 AF

THE MAXIMUM DISCHARGE FROM NODE 218419 IS: 102.19 CFS AT TIME 21.80 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.68 FEET AND A MAXIMUM VOLUME OF:  
51.04 AF

THE MAXIMUM DISCHARGE FROM NODE 218885 IS: 89.28 CFS AT TIME 21.81 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.64 FEET AND A MAXIMUM VOLUME OF:  
48.50 AF

THE MAXIMUM DISCHARGE FROM NODE 219351 IS: 80.99 CFS AT TIME 21.79 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.61 FEET AND A MAXIMUM VOLUME OF:  
44.42 AF

THE MAXIMUM DISCHARGE FROM NODE 219817 IS: 103.21 CFS AT TIME 21.82 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.22 FEET AND A MAXIMUM VOLUME OF:  
37.68 AF

THE MAXIMUM DISCHARGE FROM NODE 220283 IS: 94.30 CFS AT TIME 21.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.62 FEET AND A MAXIMUM VOLUME OF:  
49.65 AF

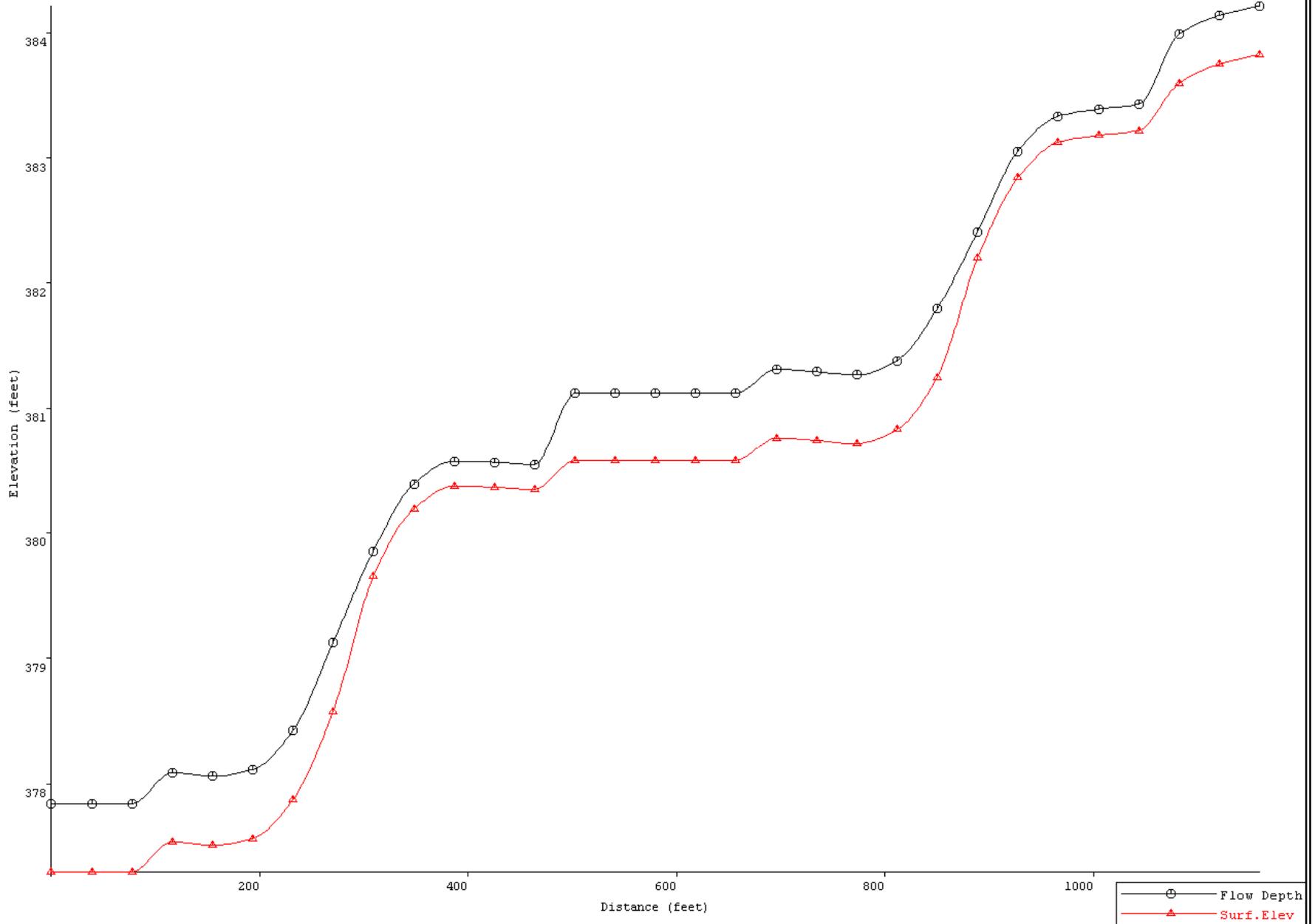
THE MAXIMUM DISCHARGE FROM NODE 220749 IS: 85.97 CFS AT TIME 21.99 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.65 FEET AND A MAXIMUM VOLUME OF:  
45.85 AF

THE MAXIMUM DISCHARGE FROM NODE 221215 IS: 77.71 CFS AT TIME 21.92 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.62 FEET AND A MAXIMUM VOLUME OF:  
41.00 AF

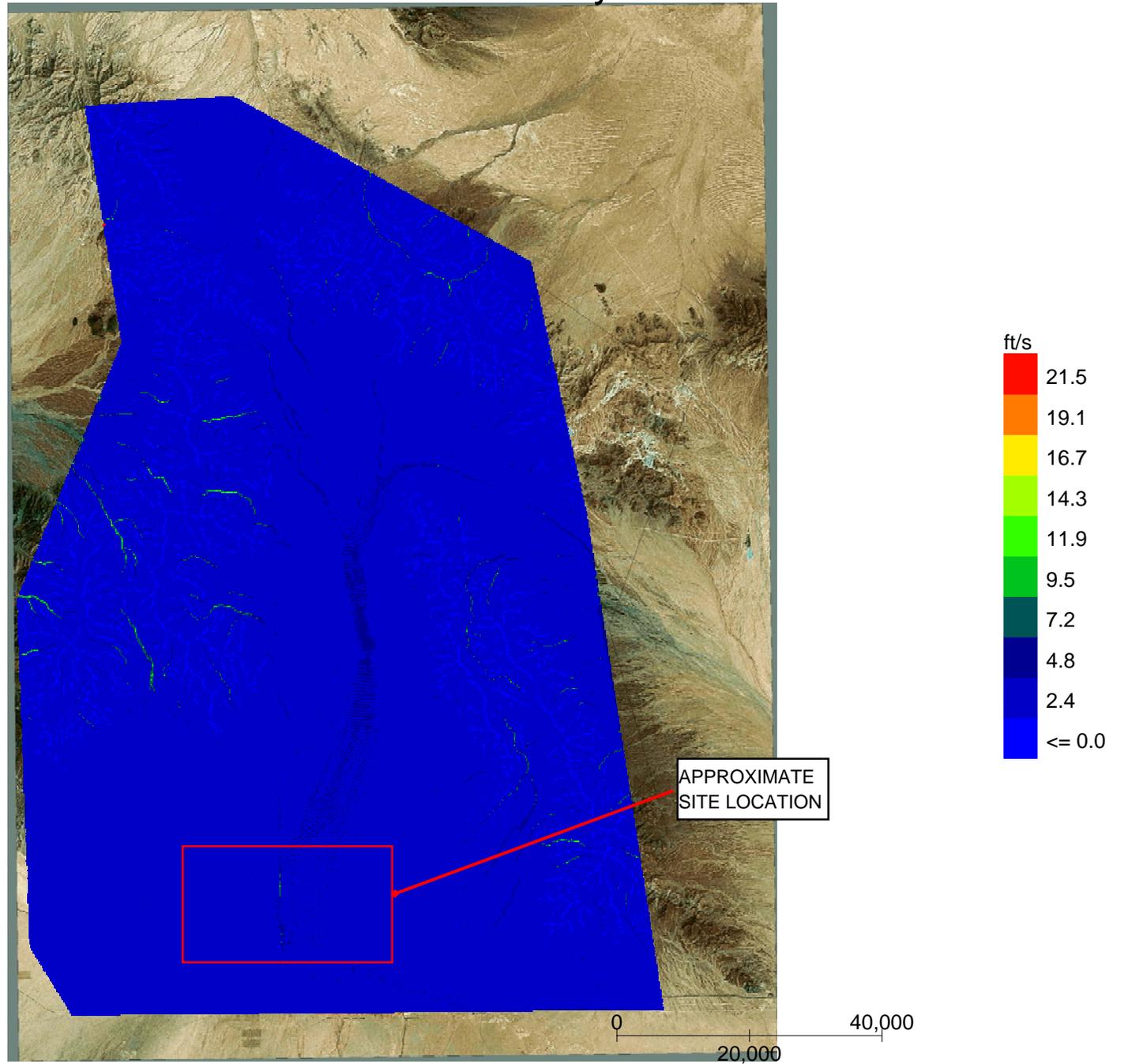
THE MAXIMUM DISCHARGE FROM NODE 221682 IS: 61.85 CFS AT TIME 22.09 HOURS  
WITH A MAXIMUM FLOODPLAIN DEPTH OF: 0.28 FEET AND A MAXIMUM VOLUME OF:  
40.65 AF

# **ATTACHMENT C**

Ground Surface Elevation plus Max Flow Elevation



# Grid Element Maximum Velocity



## **ATTACHMENT D**

SUMMARY.OUT FILE  
 CREATED WITH VERSION: 2009.06

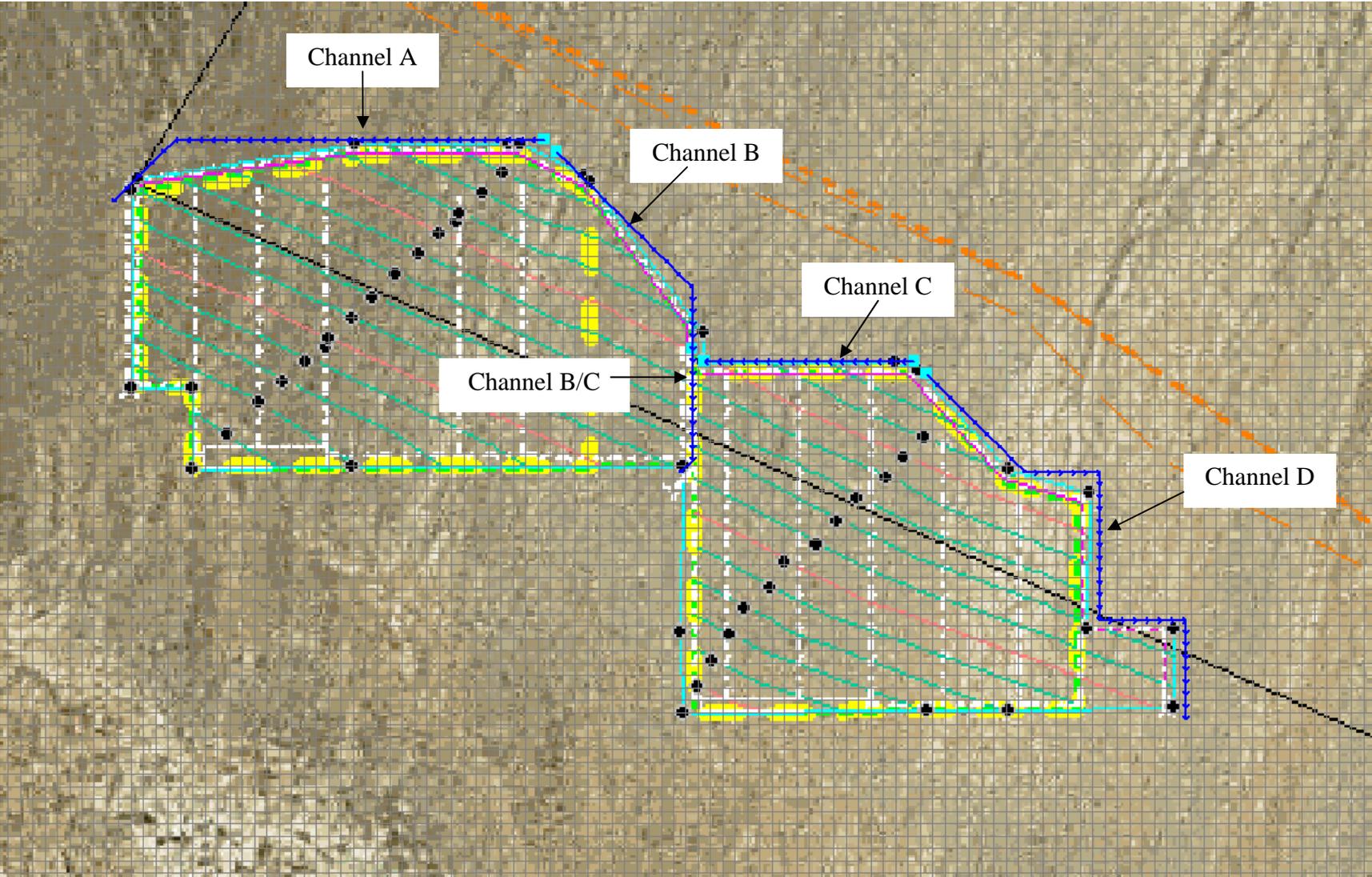
NEGATIVE VOLUME CONSERVATION (ACRE FEET)  
 INDICATES EXCESS VOLUME (OUTFLOW + STORAGE > INFLOW)

SIMULATION TIME (HOURS)	AVERAGE TIMESTEP (SECONDS)	VOLUME CONSERVATION (ACRE FEET)	PERCENT OF INFLOW
0.502	25.840	0.000009	0.000003
1.004	58.204	-0.000022	0.000003
1.504	60.000	0.000027	0.000002
2.004	60.000	-0.000029	0.000002
2.504	60.000	-0.000044	0.000002
3.004	60.000	0.000101	0.000004
3.504	60.000	0.000085	0.000003
4.004	60.000	0.000019	0.000001
4.504	60.000	-0.000014	0.000000
5.004	60.000	0.000167	0.000004
5.504	60.000	-0.000087	0.000002
6.004	60.000	0.000038	0.000001
6.504	60.000	0.000232	0.000004
7.004	60.000	-0.000019	0.000000
7.504	60.000	0.000222	0.000003
8.004	60.000	0.000209	0.000002
8.504	60.000	0.000228	0.000002
9.004	60.000	-0.000421	0.000004
9.504	60.000	-0.000234	0.000002
10.004	60.000	-0.000018	0.000000
10.504	60.000	-0.000096	0.000001
11.004	60.000	-0.000505	0.000003
11.504	60.000	0.000068	0.000000
12.004	60.000	-0.000614	0.000001
12.502	15.889	-0.000397	0.000001
13.001	8.124	0.000317	0.000001
13.501	5.108	-0.000260	0.000000
14.001	3.212	-0.000321	0.000001
14.500	1.405	-0.000532	0.000001
15.000	2.124	-0.000519	0.000001
15.500	1.735	-0.000457	0.000001
16.000	1.943	0.000559	0.000001
16.501	1.820	-0.000929	0.000001
17.000	1.184	-0.000738	0.000001
17.500	0.939	0.000832	0.000001
18.001	0.742	-0.000458	0.000001
18.500	0.717	-0.000355	0.000001
19.000	0.712	0.000654	0.000001
19.500	0.603	-0.000212	0.000000
20.000	0.720	0.000172	0.000000
20.500	1.286	0.000148	0.000000
21.000	1.279	0.000513	0.000001
21.500	1.617	-0.000616	0.000001
22.000	1.574	0.000343	0.000000
22.500	1.538	0.000013	0.000000
23.000	1.501	-0.000295	0.000000
23.500	1.469	0.000291	0.000000
24.000	1.432	0.000525	0.000001
24.500	1.403	0.000522	0.000001
25.000	1.380	0.000521	0.000001
25.500	1.364	0.000523	0.000001
26.000	1.351	0.000522	0.000001
26.500	1.352	0.000525	0.000001
27.000	1.352	0.000523	0.000001
27.500	1.352	0.000521	0.000001
28.000	1.352	0.000522	0.000001
28.500	1.348	0.000523	0.000001
29.000	1.345	0.000522	0.000001



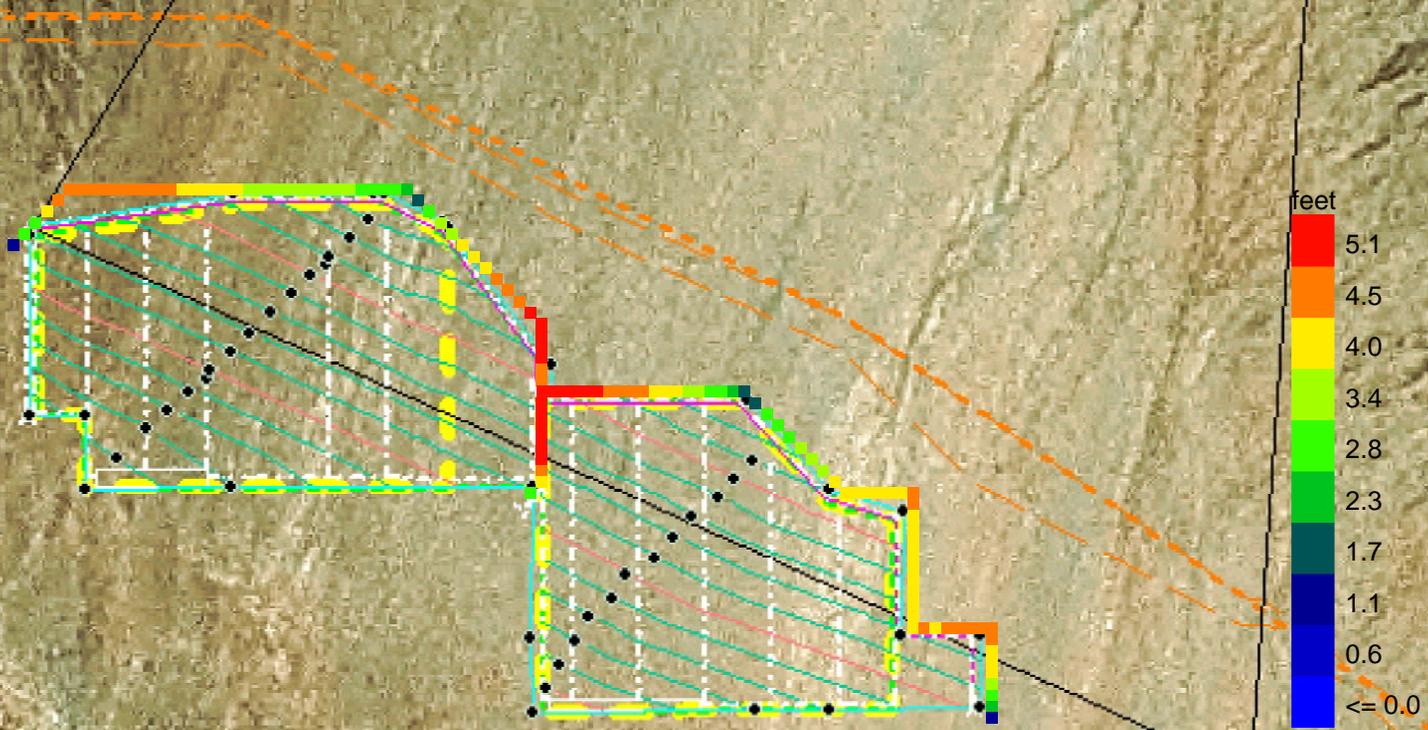
# **ATTACHMENT E**

# CHANNEL LOCATIONS



# **ATTACHMENT F**

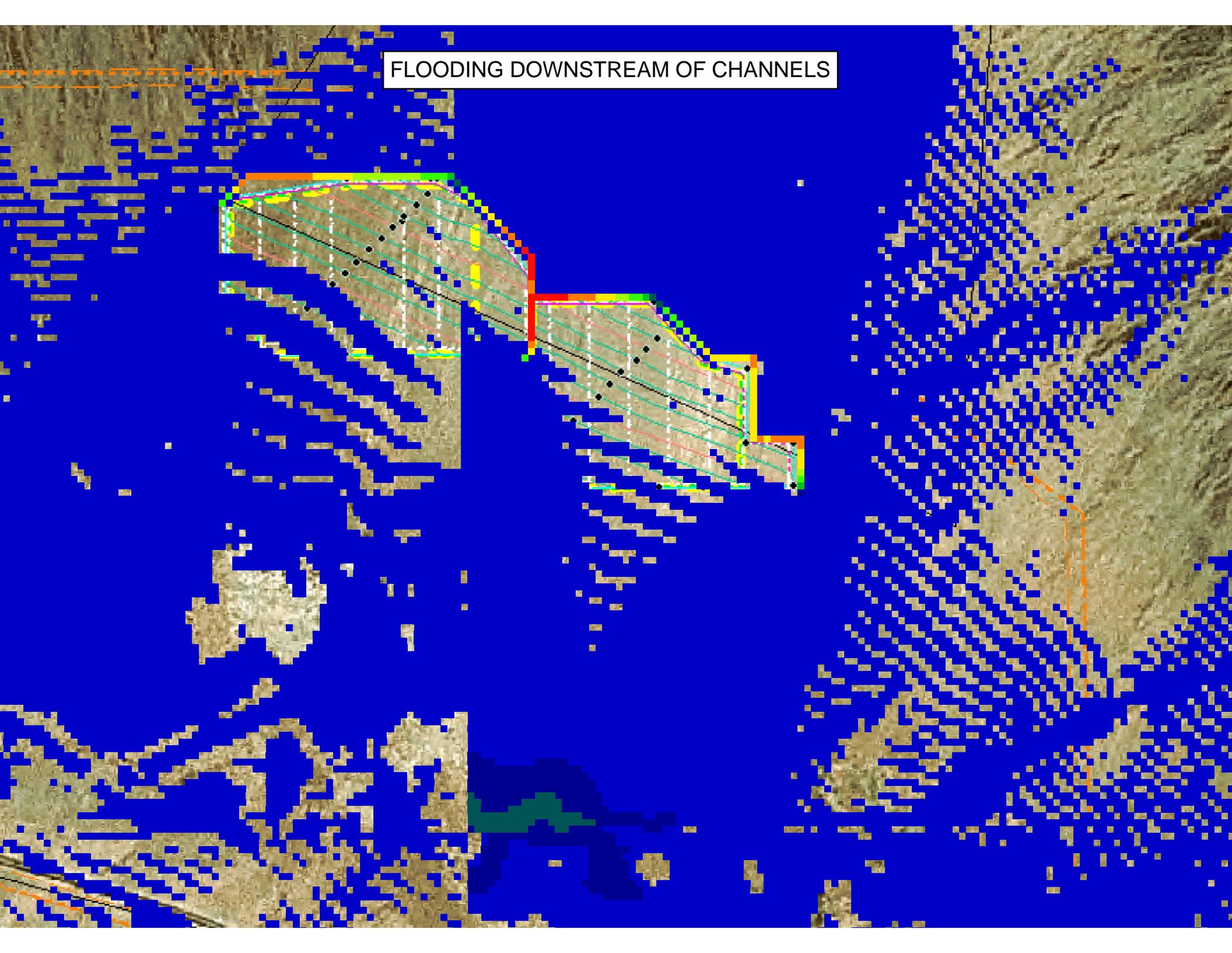
# MAXIMUM CHANNEL FLOW DEPTHS



0 3,000 6,000

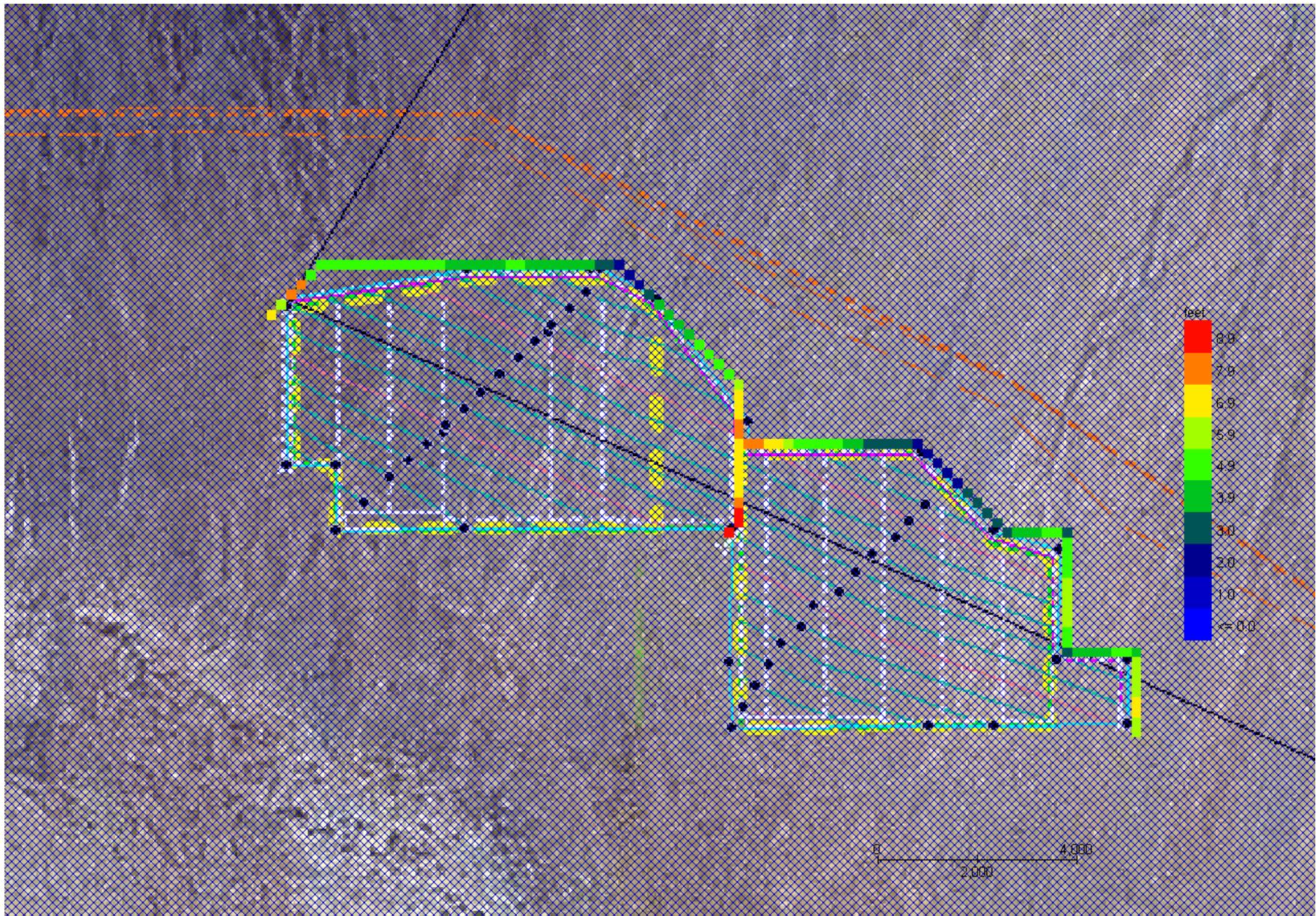
# **ATTACHMENT G**

FLOODING DOWNSTREAM OF CHANNELS



# **ATTACHMENT H**

MAXIMUM FLOODPLAIN AND CHANNEL VELOCITIES  
(Note: Legend is for the channel velocities)



# **ATTACHMENT I**

SUMMARY.OUT FILE  
 CREATED WITH VERSION: 2009.06

NEGATIVE VOLUME CONSERVATION (ACRE FEET)  
 INDICATES EXCESS VOLUME (OUTFLOW + STORAGE > INFLOW)

SIMULATION TIME (HOURS)	AVERAGE TIMESTEP (SECONDS)	VOLUME CONSERVATION (ACRE FEET)	PERCENT OF INFLOW
0.502	25.840	-0.000007	0.000002
1.004	58.204	0.000013	0.000002
1.504	60.000	-0.000014	0.000001
2.004	60.000	-0.000042	0.000003
2.504	60.000	-0.000007	0.000000
3.004	60.000	0.000089	0.000004
3.504	60.000	-0.000122	0.000004
4.004	60.000	0.000029	0.000001
4.504	60.000	0.000111	0.000003
5.004	60.000	-0.000158	0.000004
5.504	60.000	0.000013	0.000000
6.004	60.000	0.000161	0.000003
6.504	60.000	0.000353	0.000006
7.004	60.000	0.000339	0.000005
7.504	60.000	-0.000014	0.000000
8.004	60.000	0.000094	0.000001
8.504	60.000	0.000610	0.000007
9.004	60.000	0.000366	0.000004
9.504	60.000	0.000410	0.000004
10.004	60.000	-0.000141	0.000001
10.504	60.000	0.000692	0.000005
11.004	60.000	0.000049	0.000000
11.504	60.000	0.000559	0.000003
12.001	13.552	0.000584	0.000001
12.501	8.302	0.001541	0.000003
13.000	7.550	0.001158	0.000002
13.501	5.092	0.000051	0.000000
14.000	2.504	0.001029	0.000002
14.501	3.426	0.000826	0.000001
15.001	2.127	0.000859	0.000001
15.500	1.513	0.001176	0.000002
16.000	1.668	0.000703	0.000001
16.500	1.539	0.001142	0.000002
17.000	1.143	0.000593	0.000001
17.500	0.868	0.000798	0.000001
18.000	0.693	0.000212	0.000000
18.500	0.633	0.001748	0.000003
19.000	0.700	0.001961	0.000003
19.500	0.966	0.000521	0.000001
20.000	1.706	0.001905	0.000003
20.500	1.192	0.001458	0.000002
21.000	1.338	0.000662	0.000001
21.500	1.482	0.000696	0.000001
22.000	1.481	0.000819	0.000001
22.500	2.058	0.000768	0.000001
23.000	1.735	0.002109	0.000003
23.500	1.982	0.002080	0.000003
24.000	1.695	0.001829	0.000003
24.500	1.633	0.001824	0.000003
25.000	1.552	0.001819	0.000003
25.500	1.488	0.001818	0.000003
26.000	1.429	0.001822	0.000003
26.500	1.444	0.001825	0.000003
27.000	1.605	0.001827	0.000003
27.500	2.041	0.001825	0.000003
28.000	2.261	0.001827	0.000003
28.500	2.226	0.001825	0.000003
29.000	2.432	0.001825	0.000003



THE MAXIMUM INUNDATED AREA IS: 240319.52 ACRES  
THE MAXIMUM WETTED FLOODPLAIN AREA IS: 240278.45 ACRES  
THE MAXIMUM WETTED CHANNEL AREA IS: 41.07 ACRES

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COMPUTER RUN TIME IS : 12.81394 HRS

THIS OUTPUT FILE WAS TERMINATED ON: 11/26/2009 AT: 9:26:17

199825	6935400.00	2192800.00	388.26
199826	6935600.00	2192800.00	388.51
199827	6935800.00	2192800.00	388.75
199828	6936000.00	2192800.00	388.99
199829	6936200.00	2192800.00	389.22
199830	6936400.00	2192800.00	389.44
199831	6936600.00	2192800.00	389.65
199832	6936800.00	2192800.00	389.86
199833	6937000.00	2192800.00	390.07
199834	6937200.00	2192800.00	390.26
199835	6937400.00	2192800.00	390.46
199836	6937600.00	2192800.00	390.71
199837	6937800.00	2192800.00	390.87
199838	6938000.00	2192800.00	391.02
199839	6938200.00	2192800.00	391.15
199840	6938400.00	2192800.00	391.26
199841	6938600.00	2192800.00	391.39
199842	6938800.00	2192800.00	391.52
199843	6939000.00	2192800.00	391.65
199844	6939200.00	2192800.00	391.85
199845	6939400.00	2192800.00	392.15
199846	6939600.00	2192800.00	392.40
199847	6939800.00	2192800.00	392.64
199848	6940000.00	2192800.00	392.86
199849	6940200.00	2192800.00	393.08
199850	6940400.00	2192800.00	393.29
199851	6940600.00	2192800.00	393.49
199852	6940800.00	2192800.00	393.68
199853	6941000.00	2192800.00	393.86
199854	6941200.00	2192800.00	394.02
199855	6941400.00	2192800.00	394.14
200284	6935200.00	2192600.00	387.98
200316	6941600.00	2192600.00	391.96
200744	6935000.00	2192400.00	387.50
200778	6941800.00	2192400.00	391.82
201204	6934800.00	2192200.00	385.65
201240	6942000.00	2192200.00	391.78
201664	6934600.00	2192000.00	385.16
201702	6942200.00	2192000.00	391.62
202124	6934400.00	2191800.00	383.56
202164	6942400.00	2191800.00	391.51
202626	6942600.00	2191600.00	391.33
203088	6942800.00	2191400.00	391.10
203550	6943000.00	2191200.00	390.86
204013	6943200.00	2191000.00	390.60
204476	6943400.00	2190800.00	390.31
204939	6943600.00	2190600.00	390.08
205402	6943800.00	2190400.00	389.76
205864	6943800.00	2190200.00	389.43
206326	6943800.00	2190000.00	389.07
206789	6943800.00	2189800.00	388.64
207252	6943800.00	2189600.00	388.19
207715	6943800.00	2189400.00	387.66
208178	6943800.00	2189200.00	387.84
208179	6944000.00	2189200.00	388.44
208180	6944200.00	2189200.00	388.60
208181	6944400.00	2189200.00	388.92
208182	6944600.00	2189200.00	389.30
208183	6944800.00	2189200.00	389.61
208184	6945000.00	2189200.00	389.86
208185	6945200.00	2189200.00	390.09
208186	6945400.00	2189200.00	390.32
208187	6945600.00	2189200.00	390.55
208188	6945800.00	2189200.00	390.88
208189	6946000.00	2189200.00	390.98
208190	6946200.00	2189200.00	391.17
208191	6946400.00	2189200.00	391.33

CHANNEL WATER SURFACE ELEVATIONS
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208192	6946600.00	2189200.00	391.45
208193	6946800.00	2189200.00	391.51
208194	6947000.00	2189200.00	391.55
208195	6947200.00	2189200.00	391.60
208196	6947400.00	2189200.00	391.62
208641	6943800.00	2189000.00	387.84
208660	6947600.00	2189000.00	390.24
209104	6943800.00	2188800.00	387.17
209124	6947800.00	2188800.00	390.18
209567	6943800.00	2188600.00	386.80
209588	6948000.00	2188600.00	390.11
210031	6943800.00	2188400.00	386.42
210053	6948200.00	2188400.00	390.08
210495	6943800.00	2188200.00	386.08
210518	6948400.00	2188200.00	390.06
210958	6943800.00	2188000.00	385.75
210982	6948600.00	2188000.00	389.94
211421	6943800.00	2187800.00	385.23
211446	6948800.00	2187800.00	389.82
211884	6943800.00	2187600.00	384.25
211910	6949000.00	2187600.00	389.70
212346	6943600.00	2187400.00	383.11
212374	6949200.00	2187400.00	389.57
212375	6949400.00	2187400.00	389.48
212376	6949600.00	2187400.00	389.36
212377	6949800.00	2187400.00	389.22
212378	6950000.00	2187400.00	389.05
212379	6950200.00	2187400.00	388.87
212380	6950400.00	2187400.00	388.95
212844	6950400.00	2187200.00	388.84
213308	6950400.00	2187000.00	388.43
213772	6950400.00	2186800.00	388.21
214236	6950400.00	2186600.00	388.00
214700	6950400.00	2186400.00	387.77
215164	6950400.00	2186200.00	387.55
215629	6950400.00	2186000.00	387.32
216094	6950400.00	2185800.00	387.04
216559	6950400.00	2185600.00	386.83
217024	6950400.00	2185400.00	386.68
217489	6950400.00	2185200.00	386.54
217954	6950400.00	2185000.00	386.57
217955	6950600.00	2185000.00	386.52
217956	6950800.00	2185000.00	386.32
217957	6951000.00	2185000.00	386.22
217958	6951200.00	2185000.00	386.11
217959	6951400.00	2185000.00	385.96
217960	6951600.00	2185000.00	385.62
217961	6951800.00	2185000.00	385.65
218426	6951800.00	2184800.00	385.55
218892	6951800.00	2184600.00	384.95
219358	6951800.00	2184400.00	384.63
219824	6951800.00	2184200.00	384.23
220290	6951800.00	2184000.00	383.46
220756	6951800.00	2183800.00	382.87
221222	6951800.00	2183600.00	382.47
221689	6951800.00	2183400.00	381.54

CHANNEL WATER SURFACE ELEVATIONS
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CHANNEL DATA
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T	199854	0.022	25	4.8	200
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T	199853	0.022	25	3.4	200
3	3				
T	199852	0.022	25	2.78	200
3	3				
T	199851	0.022	25	3.04	200
3	3				
T	199850	0.022	25	3.3	200
3	3				
T	199849	0.022	25	3.56	200
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T	199848	0.022	25	3.82	200
3	3				
T	199847	0.022	25	4.08	200
3	3				
T	199846	0.022	25	3.95	200
3	3				
T	199845	0.022	25	2.91	200
3	3				
T	199844	0.022	25	1.91	200
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T	199843	0.022	25	1.84	200
3	3				
T	199842	0.022	25	2.1	200
3	3				
T	199841	0.022	25	2.36	200
3	3				
T	199840	0.022	25	2.62	200
3	3				
T	199839	0.022	25	2.88	200
3	3				
T	199838	0.022	25	3.14	200
3	3				
T	199837	0.022	25	3.4	200
3	3				
T	199836	0.022	25	3.66	200
3	3				
T	199835	0.022	25	3.92	200
3	3				
T	199834	0.022	25	4.18	200
3	3				
T	199833	0.022	25	4.44	200
3	3				
T	199832	0.022	25	4.7	200
3	3				
T	199831	0.022	25	4.96	200
3	3				
T	199830	0.022	25	5.22	200
3	3				
T	199829	0.022	25	4.66	200
3	3				
T	199828	0.022	25	4.1	200
3	3				
T	199827	0.022	25	3.42	200
3	3				
T	199826	0.022	25	2.98	200
3	3				
T	199825	0.022	25	3.24	241.42
3	3				
T	200284	0.022	25	3.5	282.84
3	3				
T	200744	0.022	25	3.12	282.84
3	3				

## CHANNEL DATA

T	201204	0.022	25	0.74	282.84
3	3				
T	201664	0.022	25	1	282.84
3	3				
T	202124	0.022	25	0.01	200
3	3				
0.0	0.95	0.200			
T	200316	0.022	63	5	200
3	3				
T	200778	0.022	63	5	282.84
3	3				
T	201240	0.022	63	4.76	282.84
3	3				
T	201702	0.022	63	5.2	282.84
3	3				
T	202164	0.022	63	5.64	282.84
3	3				
T	202626	0.022	63	6.08	282.84
3	3				
T	203088	0.022	63	6.52	282.84
3	3				
T	203550	0.022	63	6.96	282.84
3	3				
T	204013	0.022	63	7.4	282.84
3	3				
T	204476	0.022	63	7.84	282.84
3	3				
T	204939	0.022	63	6.7	282.84
3	3				
T	205402	0.022	63	6.09	241.42
3	3				
T	205864	0.022	63	5.82	200
3	3				
T	206326	0.022	63	6.13	200
3	3				
T	206789	0.022	63	6.44	200
3	3				
T	207252	0.022	63	6.16	200
3	3				
T	207715	0.022	63	3.78	200
3	3				
T	208178	0.022	114	4.09	200
3	3				
T	208641	0.022	114	4.4	200
3	3				
T	209104	0.022	114	4.63	200
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T	209567	0.022	114	1.74	200
3	3				
T	210031	0.022	114	2.05	200
3	3				
T	210495	0.022	114	2.36	200
3	3				
T	210958	0.022	114	2.67	200
3	3				
T	211421	0.022	114	0.1	200
3	3				
T	211884	0.022	114	0.01	200
3	3				
T	212346	0.022	114	0.01	200
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0.0	0.95	0.200			
T	208196	0.022	29	5	200
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T	208195	0.022	29	4.21	200
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T	208194	0.022	29	4.5	200

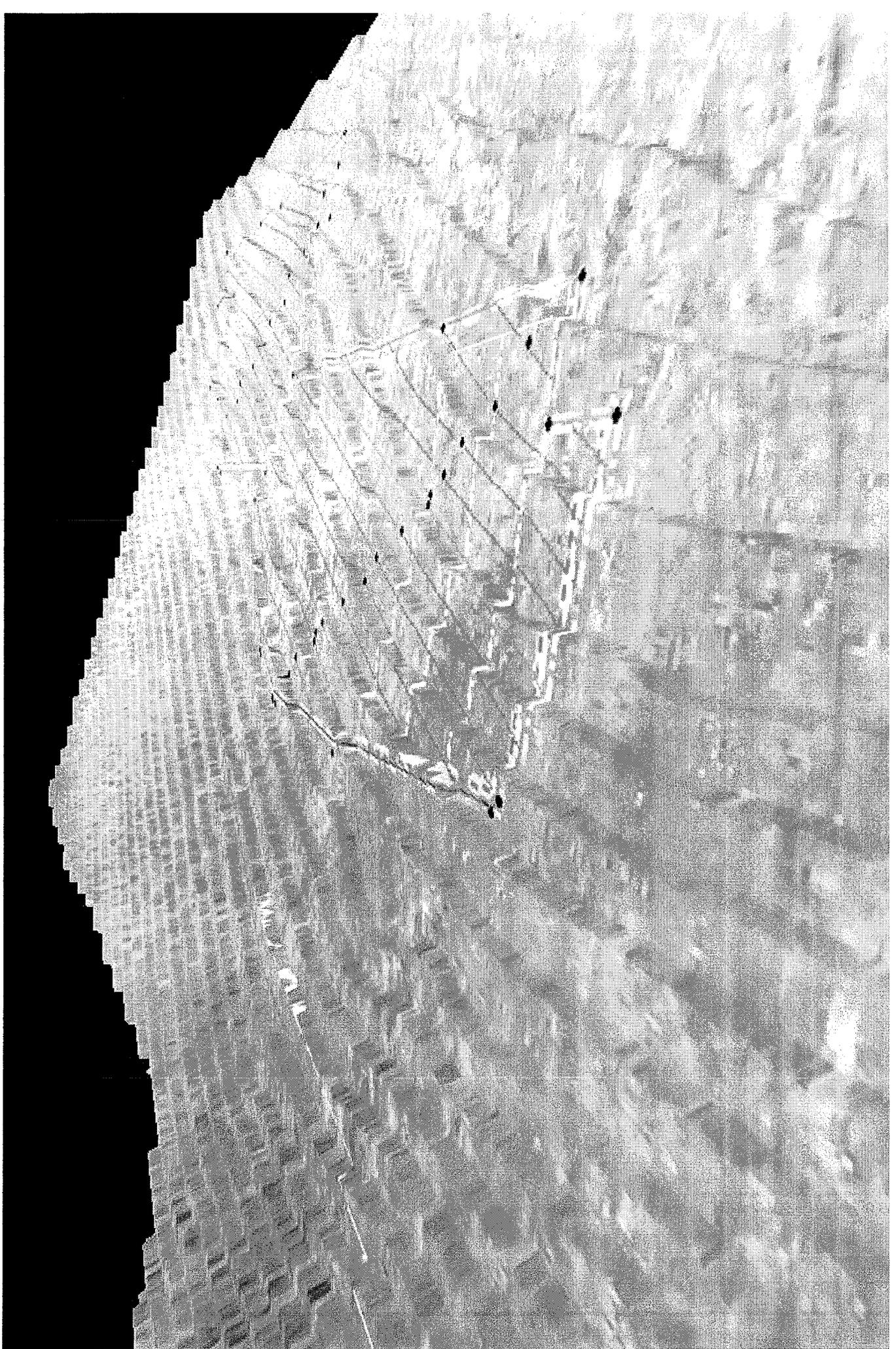
CHANNEL DATA
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T	208193	0.022	29	4.88	200
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T	208192	0.022	29	5.26	200
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T	208191	0.022	29	5.64	200
3	3				
T	208190	0.022	29	6.02	200
3	3				
T	208189	0.022	29	6.4	200
3	3				
T	208188	0.022	29	6.15	200
3	3				
T	208187	0.022	29	6.35	200
3	3				
T	208186	0.022	29	5.57	200
3	3				
T	208185	0.022	29	4.64	200
3	3				
T	208184	0.022	29	5.02	200
3	3				
T	208183	0.022	29	5.4	200
3	3				
T	208182	0.022	29	5.78	200
3	3				
T	208181	0.022	29	6.16	200
3	3				
T	208180	0.022	29	4.38	200
3	3				
T	208179	0.022	29	3.64	200
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0.0	0.95	0.200			
T	208660	0.022	72	5	200
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T	209124	0.022	72	5.94	282.84
3	3				
T	209588	0.022	72	6.19	282.84
3	3				
T	210053	0.022	72	4.8	282.84
3	3				
T	210518	0.022	72	3.41	282.84
3	3				
T	210982	0.022	72	3.66	282.84
3	3				
T	211446	0.022	72	3.91	282.84
3	3				
T	211910	0.022	72	4.16	282.84
3	3				
T	212374	0.022	72	3.95	241.42
3	3				
T	212375	0.022	72	4.63	200
3	3				
T	212376	0.022	72	4.81	200
3	3				
T	212377	0.022	72	4.99	200
3	3				
T	212378	0.022	72	5.17	200
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T	212379	0.022	72	5.35	200
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T	212380	0.022	72	5.57	200
3	3				
T	212844	0.022	72	5.71	200
3	3				
T	213308	0.022	72	5.89	200
3	3				
T	213772	0.022	72	6.07	200

CHANNEL DATA
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T	214236	0.022	72	6.25	200
3	3				
T	214700	0.022	72	3.39	200
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T	215164	0.022	72	3.33	200
3	3				
T	215629	0.022	72	3.51	200
3	3				
T	216094	0.022	72	2.05	200
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T	216559	0.022	72	0.59	200
3	3				
T	217024	0.022	72	0.77	200
3	3				
T	217489	0.022	72	0.95	200
3	3				
T	217954	0.022	72	0.18	200
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T	217955	0.022	72	1.31	200
3	3				
T	217956	0.022	72	1.49	200
3	3				
T	217957	0.022	72	1.67	200
3	3				
T	217958	0.022	72	1.85	200
3	3				
T	217959	0.022	72	2.03	200
3	3				
T	217960	0.022	72	2.21	200
3	3				
T	217961	0.022	72	4.73	200
3	3				
T	218426	0.022	72	2.57	200
3	3				
T	218892	0.022	72	2.75	200
3	3				
T	219358	0.022	72	2.93	200
3	3				
T	219824	0.022	72	2.29	200
3	3				
T	220290	0.022	72	0.01	200
3	3				
T	220756	0.022	72	0.01	200
3	3				
T	221222	0.022	72	0.01	200
3	3				
T	221689	0.022	72	0.01	200
3	3				
F	199855	200316			
F	207715	208179			
F	208196	208660			

## **ATTACHMENT J**



# Ford Dry Lake - Topo Grid (100 ft)

